

FIRST RECORD OF *NYMPHOIDES INDICA* (MENYANTHACEAE) IN TEXAS

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ABSTRACT

The first Texas record of *Nymphoides indica* (L.) Kuntze (Menyanthaceae) is reported new for Texas.

RESUMEN

Se cita por primera vez para Texas *Nymphoides indica* (L.) Kuntze (Menyanthaceae).

Nymphoides specimens were collected from Soldier Springs, Uvalde County, Texas in April 2002 and subsequently planted in small water gardens upon return to the laboratory. Specimens from this locale had previously been cursorily identified as *N. aquatica* (Bill Carr, The Nature Conservancy of Texas, pers. comm.). However, upon inspection of flowers from reared specimens, it was determined that the species was instead *N. indica* (independent species verification by David Lemke, Texas State University Biology Department), which represents a new species record in Texas.

Voucher specimen: U.S.A. Texas. Uvalde Co.: Soldier Springs, ca 2 km S. of the U.S. Hwy 90 bridge and a short distance upstream of County Road 202 (Tom Nunn crossing), floating in water with *Trichocoronis rivularis* and other species, from the banks out into mid pool, 18 Apr 2002, Saunders & Lemke s.n. (SWT).

It has since been observed in at least one other spring system upstream of Soldier Springs, also within the Nueces River basin (Chad Norris, Texas Parks and Wildlife Department, pers. comm.).

Two native *Nymphoides* species are known to occur in the southeastern United States (Wood 1983; Jaco 2002), namely *N. cordata* (Ell.) Fern and *N. aquatica* (J.F. Gmel.) Kuntze. *Nymphoides indica* (L.) Kuntze (water snowflake) is native to both New and Old World tropical regions, but like many other introduced aquatic macrophytes, has been brought to the United States for ornamental uses. Ornduff (1969) did not find consistent morphological difference between New World plants known as *N. humboldtiana* (H.B.K.) Kuntze, and Old World plants known as *N. indica* (L.) Kuntze. Ornduff thus concluded the two must be conspecific and since the name *N. indica* has priority both Old and New World specimens should be referred to by this name. Occurrence of wild populations of *N. indica*, until now has been documented only in two

southwestern counties in Florida (Wunderlin & Hansen 2004) where it is spreading rapidly (Jacono 2002).

Nymphoides indica is a floating perennial with tuberous and adventitious, spur-like roots; it can propagate through rhizomes. Within its native range, it occurs in shallow ponds and stream pools at elevations below 1500 m (Ornduff 1969; Sivarajan & Joseph 1993). Flowers are produced in cymose, umbel-like clusters, which occur on the petiole on the same node as the spur-like roots. Flowers have four to eight petals covered with copious marginal hairs producing a furry appearance, hence the common name water snowflake (Wood 1983). The flowers are fairly small and slender (1.7–2.7 cm wide), white with a center area of light yellow (Ornduff 1969; Jacono 2002). Anthers are often black and seeds range from 1.0–1.7 mm in length (Ornduff 1969).

The springs and pool at Soldier Springs lie entirely within the flood plain of the Nueces River but during normal flows are separated from the main course by a point of land. The pool flows into the river at the downstream end of the point along the eastern edge of the channel. Spring flows emanate from gravel and cobble substrates within a short spring run at the head of the pool. The pool has depths in excess of 1.3 m (Bill Carr, *op cit*), is up to 30 m wide, and measures a few hundred meters in length. Brune (1981) classified the springs as moderately large, meaning they have a mean discharge between 0.79 and 7.93 m³/s.

At the time of the *Nymphoides indica* collection, the spring run and pool were densely vegetated with various aquatic macrophyte species. Among the most prolific was *Trichocoronis rivularis*, a species with restricted global distribution and found only in a few southwestern Texas and northern Mexico spring systems and cienegas (Bill Carr, *op cit*). *Trichocoronis rivularis* together with *N. indica* formed areas of very dense vegetation extending from the banks out into mid pool. Both species were distributed throughout the pool but were most dense from the mouth of the spring run downstream to about the middle of the pool. Other common macrophytes included *Justicia americana*, *Ludwigia* sp., *Myriophyllum* sp., *Nasturtium officinale*, and *Potamogeton illinoensis*.

ACKNOWLEDGMENTS

Thanks to Bill Carr, The Nature Conservancy of Texas, for providing background information, and to David Lemke, Texas State University, Biology Department for verification of specimen identification. Nicholas Tippery and Guy L. Nesom provided helpful review comments.

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